

2.4 Writing Equations of Lines using Point-Slope Form

POINT-SLOPE FORM

$$y - y_1 = m(x - x_1)$$

Given THE POINT (x_1, y_1) and slope, m , write in slope-intercept form.

Ex 1 $(2, -4)$, $m = 6$
 x_1, y_1

$$y - y_1 = m(x - x_1) \quad \rightarrow \text{SUBSTITUTION } x_1=2, y_1=-4, m=6$$

$$y - (-4) = 6(x - 2) \quad \rightarrow \text{DISTRIBUTIVE PROPERTY}$$

$$y + 4 = 6x - 12$$

$$\begin{array}{r} -4 \quad | \quad -4 \\ \hline \end{array}$$

$$\boxed{y = 6x - 16}$$

Ex 2 $(3, 5)$, $m = \frac{1}{3}$

$$y - 5 = \frac{1}{3}(x - 3)$$

$$y - 5 = \frac{1}{3}x - 1$$

$$\begin{array}{r} +5 \quad | \quad +5 \\ \hline \end{array}$$

$$\boxed{y = \frac{1}{3}x + 4}$$

Homework: p. 95 #13-24

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AND #4-7